

58



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,608	08/28/2001	Kei Tanaka	32739M056	4518

7590 09/21/2004
 Smith, Gambrell & Russell, LLP
 Beveridge, DeGrandi, Weilacher & Young
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 1850 M Street, N.W., Suite 800
 Washington, DC 20036

EXAMINER

MOE, AUNG SOE

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

58

Office Action Summary

Application No.

09/939,608

Applicant(s)

TANAKA ET AL.

Examiner

Aung S. Moe

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 9-17 is/are allowed.
- 6) ☒ Claim(s) 8 and 18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. **The abstract** of the disclosure is objected to because the abstract should not use legal phraseology such as “The apparatus **comprises**”. In view of this, please change the phrase “The apparatus comprises” as recited in line 3 to - - The apparatus includes - -. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 8 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Tokuyama et al. (U.S. 6,324,309 B1).

Regarding claim 8, an area separating apparatus (Fig. 1) for judging whether or not each object pixel belongs to a thin line image area (i.e., noted the thin line image area “P” as shown in Figs. 3-6) in an image on the basis of image data indicative of density gradation levels of pixels constituting the image, the apparatus comprising:

a first direction density difference summing circuit (i.e., Fig. 1, the elements 2, 3, 6 and 12) for determining differences in image data between respective adjacent pairs of pixels aligning in a first direction (i.e., noted the E-direction as shown in Fig. 3) in a second image block of a predetermined size containing the object pixel (i.e., noted 5x5 block as shown in Fig. 3 and 3x3 block as shown in Figs. 9a) and summing the image data differences for all the pixels in the second image block for determination of a first direction density difference sum (i.e., see col. 6, lines 35- col. 7, lines 68);

a second direction density difference summing circuit (i.e., Fig. 1, the elements 2, 3, 6 and 12) for determining differences in image data between respective adjacent pairs of pixels aligning in a second direction (i.e., noted the S-direction as shown in Fig. 4) different from the first direction in the second image block and summing the image data differences for all the pixels in the second image block for determination of a second direction density difference sum (i.e., see col. 6, lines 35- col. 7, lines 68); and

a second judgment circuit (Fig. 1, the elements 5-7 and 12) for judging whether or not the object pixel belongs to the thin line image area on the basis of a magnitude relationship between the first direction density difference sum (i.e., noted the density difference sum in the E-direction as discussed in col. 7, lines 14+) and the second direction density difference sum (i.e., noted the density difference sum in the S-direction as discussed in col. 7, lines 14+) respectively calculated by the first direction density difference summing circuit and the second direction density difference summing circuit (i.e., see col. 7, lines 5+ and col. 8, lines 5+).

Regarding claim 18, an area separating method (i.e., Fig. 1) for judging whether or not each object pixel belongs to a thin line image area in an image (i.e., noted the thin line image area "P" as shown in Figs. 3-6) on the basis of image data indicative of density gradation levels of pixels (i.e., noted that the density transforming section 2 provides density gradation levels of pixels) constituting the image, the method comprising the steps of:

determining differences in image data (i.e., noted that the elements 2, 3, 6 and 12 of Fig. 1 is capable of determining differences in image data) between respective adjacent pairs of pixels aligning in a first direction (i.e., noted the E-direction as shown in Fig. 3) in a second image block of a predetermined size containing the object pixel (i.e., noted 5x5 block as shown in Fig. 3 and 3x3 block as shown in Figs. 9a) and summing the image data differences for all the pixels in the second image block for determination of a first direction density difference sum (i.e., see col. 6, lines 35- col. 7, lines 68);

determining differences in image data (i.e., noted that the elements 2, 3, 6 and 12 of Fig. 1 is capable of determining differences in image data) between respective adjacent pairs of pixels aligning in a second direction (i.e., noted the density difference sum in the S-direction as discussed in col. 7, lines 14+) different from the first direction in the second image block (i.e., noted 5x5 block as shown in Fig. 3 and 3x3 block as shown in Figs. 9a) and summing the image data differences for all the pixels in the second image block for determination of a second direction density difference sum (i.e., see col. 6, lines 35- col. 7, lines 68); and

performing a second judgment process (i.e., noted from Fig. 1, that the elements 5-7 and 12 are capable of performing a second judgment process based on the magnitude relationship between the first and second direction density difference sum values CE and CS as discussed in

Art Unit: 2612

col. 7, lines 5- col. 8, lines 55+) to judge whether or not the object pixel belongs to the thin line image area on the basis of a magnitude relationship between the first direction density difference sum (i.e., noted the density difference sum in the E-direction as discussed in col. 7, lines 14+) and the second direction density difference sum (i.e., noted the density difference sum in the S-direction as discussed in col. 7, lines 14+).

Allowable Subject Matter

3. Claims 1-7 and 9-17 are allowable over the prior art of record.

Conclusion

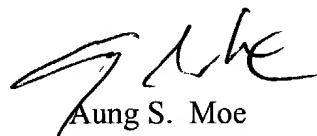
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Tokuyama '425, Fujita '402, Tokuyama '206, Suzuki '941, Kojima '902 shows an area separating apparatus and method thereof.

Art Unit: 2612

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
September 14, 2004